productivity results will be caused by the fluctuations in revenues from ancillary activities.

B. Total Operating Expense and Input Measurement

The linkages between expenses and TFP input measures are more complicated than the elasticity linkages between revenue and output described above. These complexities are described below in terms of the price, quantity and weighting components of each of the three input categories utilized in TFP studies. Moreover, despite the numerous data elements shared by earnings and TFP computational procedures, the subtleties of developing the total input quantity index cause differences in the magnitude and direction of short-term growth rates of accounting expenses and a TFP input index.

1. Capital

One stumbling block to understanding the linkage between earnings and productivity arises from the process of developing capital costs and related capital weights. In telecommunications productivity studies, capital costs series are developed for several subcategories of telephone plant using the implicit rental cost method which views capital costs as having four components:[4] (1) the holding cost of capital held in the form of telephone plant rather than other income producing forms; (2) the cost of age related declines in efficiency of equipment; (3) changes in the market value of telephone plant; and (4) profits and property taxes. These components correspond to accounting data (interest rates, depreciation expense, income taxes, property taxes, and depreciation rules) used in the calculation of earnings.

The capital costs that result from the implicit rental cost computational procedure provide the weights that are used to incorporate the constant dollar value of annual telephone plant additions into the perpetual inventory capital stock model. Capital cost levels in each asset category are quite volatile, primarily because fluctuations in long-term interest rates will cause fluctuations in the measured holding cost component of the implicit rental cost. The capital cost weight for a category is the percentage of total capital costs of all asset categories accounted for by that asset category. Capital cost weights are stable over time because fluctuations in long-term interest rates have the same relative impact on holding costs for all asset categories.

The constant dollar value of telephone plant additions is the ratio of telephone plant additions in each category of telephone plant to the corresponding telephone plant price index (TPI). The TPI for each category of telephone plant measures the percentage change in

[4] For a more detailed explanation of the development of the quantity of capital see Christensen, p. 8.

the price of telephone plant.[5] The use of telephone plant additions data, TPIs, and a perpetual inventory model of capital stock in TFP measurement represents three additional items which cause differences in annual earnings and productivity results.

The perpetual inventory capital stock model computes current period constant dollar capital stock by combining annual constant dollar additions, an estimate of constant dollar retirements and the previous period constant dollar capital stock. The capital input quantity index is the percent change in the constant dollar capital stock. The estimate of constant dollar retirements is based on an engineering analysis of telecommunications equipment. There is no direct counterpart to constant dollar retirement estimates in earnings calculations. Thus, annual comparisons of earnings and productivity results will be distorted to the extent that the earnings impact of asset write-offs and use of assets beyond their accounting life differs from the estimate of capital retirements embodied in the perpetual inventory-based estimate of capital stock.

2. Labor

Accounting measurement of labor cost captures employee compensation expenses. TFP measurement subdivides compensation into three pieces: (1) the size of the labor force subdivided into broad subgroups such as management and non-management; (2) average number of non-capitalized hours per employee in each subgroup; and (3) the average wage rate in each subgroup. The labor input quantity index is defined as an index of the number of hours worked per employee in each subgroup weighted by the average subgroup wage. In TFP studies the price index for labor is the ratio of employee compensation expenses to the labor quantity index.

Once again, as in the case of capital input, events that have a material impact on earnings may have only a minimal impact on contemporaneous TFP results. For example, changes in employee compensation may have a material impact on earnings, but, unless such changes are accompanied by a proportionate change in the quantity of labor, productivity and earnings measures will tend to diverge. Furthermore, productivity and earnings divergences will occur as the composition of positions eliminated by downsizing changes. Thus, once again, annual earnings is shown to be an unreliable basis for inferences concerning the magnitude or direction of annual productivity changes.

3. Materials

This category of input includes all non-wage expenses except depreciation expense and interest costs. The conversion of nominal amounts in this category to constant dollars is

[5] Technically, the price used in TPI development reflects the unit price paid to the equipment vendor in addition to costs associated with shipping, warehousing, and both company employee and outside vendor involvement in equipment installation.

accomplished by deflation using a broad based measure of inflation such as the GDP-PI. Among the types of expenses grouped into this category are those most likely to be subject to different or changing accounting rules or inclusions or exclusions from earnings calculations. Changes in this category are likely to have a smaller impact on TFP than on earnings because the material share of total input of approximately 24 percent is smaller than the 35 percent marginal federal income tax rate. Thus, for example, a $1 million decrease in materials expense will result in a reduction of a $240,000 decrease in total inputs used as weighting components in TFP calculation in contrast to a $650,000 increase in net income.

C. Aggregate Input Quantity Index and Aggregate Input Price Index

To this point the discussion has concentrated on the development of quantity indexes of each of the input categories. The discussion will now turn to derivation of the weights for aggregation of the input quantity index. The Tornqvist approach calculates input weights as the two-year average share of total nominal input accounted for nominal capital, labor and materials. Nominal labor and materials amounts are the labor compensation and materials amounts used directly in the earnings calculation.[6] Nominal capital input is the sum of nominal return to capital, property taxes, profit taxes, and capital consumption.[7] A weighted aggregate input index is the Tornqvist weighted average of each input quantity index.

The combination of the nominal input amounts and input quantities allows the computation of implicit input price indexes for total input and each input component. These implicit indexes are useful for checking data consistency, but are of limited analytical value for comparison to price either broad price indexes (e.g. GDP-PI) or similar measures constructed from national productivity data. Due to their construction, these implicit price indexes are highly volatile in the short term. In contrast to the implicit TFP price indexes, the traditional measures of inflation such as GDP-PI are designed to convey information about the movement in prices based on direct observation. Therefore, it is virtually meaningless to compare short-term growth in the implicit TFP input price index with traditional measures of inflation such as GDP-PI.

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[6] Labor compensation includes wages, salaries and fringe benefits. Materials is computed as total operating expenses less depreciations expense less labor compensation.

[7] The two items which require computation are nominal returns to capital and capital consumption. Nominal return to capital can be measured as the product of average gross booked telephone plant and a suitable long term interest rate (such as the Moody's 20-year Utility Bond rate) reduced by capital gains. The capital consumption can be measured as accounting depreciation adjusted to reflect economic lives rather than accounting lives of telephone plant.

III. Conclusion

It is clear that the objectives of earnings and productivity measurement are quite different. To achieve these objectives the derivation of TFP components is designed to focus attention on long-term growth trends rather than short-term orientation of earnings measurement. Therefore, any assumption that productivity gains can be inferred from annual earnings results should be rejected.

PROPOSED COMMON LINE PRICE CAP INDEX TREATMENT

In order to facilitate an orderly transition of the price management of common line rate elements, SWBT recommends a single two-part change to the Common Line price cap index treatment:

1) Apply the demand adjustment (g/2) in the Common Line price cap index to only the fraction of Common Line revenue that is recovered on a per minute basis.[1]

2) Calculate compliance with the Common Line price cap using the calculation of an Actual Price Index (API) for common line rate elements, including the proposed End User Common Line (EUCL) rates.[2]

This proposed change is computationally much simpler than the current treatment. This change results in maximum CCL rates equal to those under the current rules as long as the CCL rate elements are charged on a per MOU basis. Importantly, the proposed change makes a measured and orderly transition to a simplified price cap index when a LEC begins charging CCL on other than a MOU basis. A LEC that has no common line costs being recovered on a per MOU basis has no reduction in the PCI due to the demand adjustment portion of the formula (i.e., "sg/2"). Otherwise, the demand adjustment reduction in the PCI continues to apply.

SWBT proposes the following common line price cap index formula:

$$PCI_t = PCI_{t-1}[1 + W[(GNP\text{-}PI - X - (sg/2)) / (1 + (sg/2))] + \Delta Z/R]$$

where is the base period share of CCL revenue as a percent of total CL revenue and GNPI, x, g, ΔZ, R and W are defined as in Part 61.45(c).

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[1] This requires multiplying the "g" in the Common Line PCI formula by a fraction "s" in two places in the PCI formula, where "s" is the percent of Common Line revenue recovered on a per minute basis as a share of total Common Line revenue. In keeping with existing price cap mechanics, the revenue share "s" would be calculated using base period demand times price. This modifies Part 61.45(c).

[2] Thus, Part 61.46(a) would apply to the common line rate elements included in the public policy basket for price management purposes.

The effect of the first part of this change is to ensure that the demand adjustment -- which is a concern for only that portion of Common Line revenue that grows when minutes grow -- applies only to per-minute common line revenue. The effect of the second part of this change is to eliminate the subtraction formula in Part 61.46(d), replacing it with the more straightforward API calculation in Part 61.46(a). Both changes are needed together to accomplish SWBT's proposal, and SWBT strongly opposes making the second part of this change without the first part.

ALTS' PROPOSED "TRANSACTION COST ECONOMICS" PARADIGM IS INAPPROPRIATE FOR DETERMINING THE COMPETITIVENESS OF MARKETS

I. Introduction

The principal claim made by ALTS is that it is imperative for the Commission to adopt an entirely new economic paradigm to make judgments about market power and pricing flexibility.[1] Specifically, ALTS proposes that the Commission alter its approach for analyzing the access and local exchange markets to include what is known in the economics literature as "transaction cost economics." ALTS argues that the current model of industrial organization relied upon by the Commission, the Structure/Conduct/Performance (S/C/P) paradigm, is sufficiently limited and fails to account for several critically important factors that limit competition.

ALTS has severely misinterpreted and misused the transaction cost economics (TCE) paradigm and has engaged in wholly specious arguments as to how market power should be measured. ALTS' proposal is rebutted by Dr. Harris.[2] ALTS' misapplication of transaction cost economics, property rights and "asset specificity" is an attempt to justify special uneconomic privileges for new entrants. In reality, any reliance on transaction cost economics as a basis for public policy decisions adds little or nothing to what the Commission can accomplish by properly adhering to the more traditional model of S/C/P. However, it would add another entire level of regulatory analysis of highly contested contracts and transactions, and would expand tremendously the Commission's function of arbiter between the LECs and their competitors and customers.

II. The Transaction Cost Economics Approach and the Structure/Conduct/Performance Approach

As ALTS points out, the TCE approach does differ from more familiar ways of analyzing markets. According to its chief architect, economist Oliver Williamson, TCE is, essentially, a study of contracting.[3] It emphasizes that firms incur costs in transacting business, such as the cost of writing and enforcing contracts. The transaction cost approach to market analysis uses differences in transaction costs to explain why structure, conduct, and performance differ across industries.

The transactional approach may be accurately stated in abbreviated form as follows. First, in transaction economics, economic transactions are alleged to be a meaningful

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[1] ALTS, p. iii.

[2] USTA, Reply Comments, Attachment 1, pp. 27-29.

[3] Oliver Williamson, "The Economics of Antitrust: Transaction Cost Considerations," in Oliver E. Williamson, Antitrust Economics, pp. 71, 72 (1987).

unit of economic analysis, as opposed to more traditional units of analysis such as costs or the production processes of firms. Given this, four basic concepts underlie this approach:

1. Markets and firms are viewed as alternative means for completing related sets of transactions. For example, a firm can either *buy* a product or *produce* it.

2. The relative cost of using markets or a firm's own resources is presumed to determine the choice.

3. The transaction costs of writing and executing complex contracts across a market which are presumed to vary with the characteristics of the human decision makers involved with the transaction on the one hand, and the objective properties of the market on the other, are hypothesized to be primary determinants.[4]

4. These human and environmental factors affect the transaction costs across markets and within firms.

Given the above basis, the transaction cost approach attempts to identify a set of market or transactional factors which, together with a related set of human factors, attempt to explain the circumstances under which complex contracts involving contingent claims will be costly to write, execute, and enforce, and thereby preclude market transactions. These factors are presumed to include asset specificity, uncertainty and the small number of firms, and human factors, such as bounded rationality and opportunism.

A key contribution of the transaction cost approach is that it seeks to explain vertical integration, why it is engaged, and its antitrust implications. In Markets and Hierarchies, Oliver Williamson posits that firms vertically integrate to reduce transactions costs. He argues that vertical integration can be a means of avoiding costs of writing and enforcing interfirm contracts by resorting to an equivalent internal organization.[5] Thus, Williamson shows that vertical integration is beneficial.

In general, then, the transaction cost approach differs from the more traditional S/C/P approach utilized in regulatory and antitrust analysis. The S/C/P approach assumes that an industry's performance depends on the conduct of sellers and buyers, which depends on the structure of the industry. The structure, in turn, depends on basic conditions, such as technology and demand for the product. The S/C/P paradigm is behind much of what is normally discussed in regulatory proceedings, including when a market is competitive, when market power is likely to be present, and when regulation is required.

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[4] Id., p. 74.

[5] Oliver Williamson, Markets and Hierarchies, p. 194 (1975).

Note, however, that the S/C/P approach, though extremely useful, may impute anticompetitive purposes to complex business organizations or practices when in fact, they exist simply to minimize transaction costs.[6] It is here that the transaction cost approach makes a sizeable contribution, and one that runs counter to the general claims of ALTS' proposal.

III. ALTS' Proposed Transaction Cost Economics Paradigm Is Seriously Flawed as a Policy Guide for the Commission .

A. Overview of ALTS' Proposal

ALTS' misapplied proposal consists of the following basic elements:[7] ALTS contends that the essential first step to a competitive local exchange marketplace is to define the scope of the rights attendant to the provision of services by the LECs to the CAPs and other customers -- including interconnection and access to local distribution networks. The second step recommended by ALTS is to take regulatory actions that will minimize the cost of transferring those rights. ALTS further contends that if transaction costs are sufficiently low, emerging competitors will be motivated to purchase access and will be able to compete effectively. Further, ALTS claims that the most significant factor affecting transaction costs is the degree to which LEC services require the use of specialized assets, or asset specificity; the greater the degree of specialization, the greater the incentive to engage in anti-competitive behavior. ALTS alleges that the present elements of access and interconnection to local exchange are largely asset specific because (1) the national telephone system developed as an integrated monopoly with no external buyers, and (2) the LECs recognized that the more asset-specific that access could be made (the more expensive and difficult to understand and use it), the more difficult it would be for competition to thrive.

Per ALTS, the task of the regulator is to take actions to reduce transaction cost barriers to competition, including, most importantly, an insistence on the use of non-specialized assets in the provision of access, increasing the amount of information available to the LECs and their buyers, and increasing the frequency of purchase of access services by fostering the emergence of a multitude of buyers. As a practical solution, ALTS proposes industry negotiations under the auspices of the Commission staff to develop consensus on the terms and conditions of access elements. The "bottom line" for ALTS is that it wants the Commission to establish a framework which permits the LECs' facilities "to be exchanged in the marketplace on an open and non-discriminatory basis with a minimum of transaction costs to the participants."[8]

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[6] Id. at 251.

[7] ALTS, pp. 6-11, 35-53.

[8] ALTS, p. 12.

B. Major Flaws of ALTS' Proposal

The transaction cost approach has been recognized as a significant contribution to academic economic theory. The academic contribution earned Sir Ronald Coase a Nobel Prize in economics in 1991 for initiating and developing the theoretical approach. It is also clear that, even to the major proponents of this approach to economic analysis, this approach does not supplant approaches such as the S/C/P paradigm that are relied upon implicitly by the Commission. What is far less clear, moreover, is how the transaction cost paradigm leads to the policy conclusions that ALTS has drawn from it.

ALTS appears to labor under an assumption regarding the LECs' requests for reduced regulatory oversight that simply does not hold true. SWBT and other LECs have not argued that the entire access marketplace is contestable and that such competition (or contestability) should substitute for the current or future interstate regulation of the LECs. Thus, the need for a new paradigm is premature, since no party has argued for deregulating the total market for interstate access services. SWBT and other LECs merely urge the Commission to reduce regulation when competition is present in specific geographic exchange access markets.

ALTS' proposal to adopt the transaction cost economics paradigm is based on the unfounded claim that the S/C/P paradigm (properly applied) is inadequate in assessing competition because it does not consider certain critical details essential to an adequate understanding of the complexities of transactions in the access markets. According to ALTS, the S/C/P paradigm does not apply in these markets because the types of interfaces and connection arrangements needed by competitors are more varied and considerably more complex than, for instance, those that characterized the terminal equipment (CPE) and interexchange carrier (IXC) markets. ALTS claims that "there were fewer variants among the types of transactions in the cases of the CPE and IXC markets and less reason to examine them closely."[9] ALTS argues that these "greater complexities" require the rigorous examination of transactions by which access is furnished.

This basic premise of ALTS' proposal is without support. Instead, ALTS presents a "wish list" of conditions to support "the complexity of competitors' needs from LEC networks,"[10] similar to AT&T and MCI's lists of preconditions to local exchange competition.[11] ALTS has drawn further specious and self-serving conclusions and attempted to cloak them under the TCE paradigm. ALTS claims that the most important factor in analyzing transactions is the degree of asset specificity, i.e., the extent to which the asset cannot be used for other applications. ALTS maintains that the LECs purposely increased asset

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[9] ALTS, p. 36.

[10] ALTS, Exhibit A, Jerry B. Duvall and John G. Williams, "Guidelines for Designing Federal Regulatory Policy to Promote Competitive Local Telecommunications Services, " May 1994, p. 2, Table 1.

[11] AT&T, pp. 16-18; MCI, pp. 72-76.

network complexity, extending vertical integration, and implementing other "safeguards," such as long term contract with substantial termination penalties, and highly bundled access arrangements.

Consider, for example, the following ALTS' statement: "in the context of the local exchange market, vertical integration by the LECs of their access offerings through mergers of their local and toll operations would make it more difficult, in many cases virtually impossible, for the CAPs or other potential competitors to obtain access to LEC facilities and would eliminate the possibility of meaningful competition."[12] SWBT strenuously disagrees with this unfounded statement. The TCE approach is not supportive of this conclusion. The TCE approach is based on economic efficiency just as the S/C/P paradigm is. It is not "competition" per se that is important to sound telecommunications policies, it is economic efficiency. ALTS seems to be inferring that all vertical integration is harmful, because it may make it difficult for new entrants to enter a market. Vertical integration, however, in lieu of a market structure where a specific service is supplied by CAPs, may be the most efficient form of industry supply. The TCE approach, as developed and interpreted by others than ALTS, supports this: under the TCE approach, the relative cost of using markets or a firm's own resources should determine the choice. To the extent that industry supply is efficient under vertical integration, then efficiency is still served. This will be true no matter if one uses the TCE approach, the S/C/P, or contestability theory.

ALTS' "solution" to the LECs' alleged "anticompetitive access offerings" is to make access "as non-specific as is economically efficient." ALTS claims that "in most cases, this means that access should be unbundled to its smallest discrete elements."[13] Thus, ALTS' underlying desire to achieve complete unbundling appears to be the driving force behind ALTS' peculiar application of Williamson's new regulatory paradigm. It appears that the clients of ALTS are incorrectly interpreting this new body of economics in their attempt to force inefficient regulatory solutions on the access markets. However, contrary to ALTS' claim, the TCE approach most certainly does not condone or support comprehensive unbundling.

In addition to complete unbundling, ALTS would require the LECs to completely disclose the costs and features of each type of access service. Contrary to what ALTS implies by this requirement, company proprietary information is not typically disclosed in competitive markets. To the contrary, companies guard such information because disclosing this information (whether by regulatory requirements or not), places the firm disclosing the information at a severe competitive disadvantage. Achieving advantages over one's rivals is an integral component of the competitive process and does not represent a barrier to entry.[14] This is an

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[12] ALTS, p. 38.

[13] ALTS, pp. 48-49.

[14] The Commission appropriately recognized this in its Long Distance order, stating: "An incumbent firm in virtually any market will have certain advantages -- including, perhaps,

(continued...)

attempt by ALTS, representing the LECs' competitors, to ensnare the LECs in a web of detailed regulatory debates, placing the LECs at strategic competitive disadvantages in head-to-head competition.

C. Market Shares Are Not a Reliable Measure of Market Power

Despite ALTS' proposal for a new regulatory paradigm and the brave new world it could bring, it has relied on a very shop-worn and erroneous argument as a measure of competition. ALTS has stated that:

> An examination of widely-accepted measures of effective competition, such as relative market share, proves beyond any reasonable doubt that the LECs do not currently confront significant competition, however defined. . . . Even a cursory study of the basic market share indicia proves the point. If access revenues are used to calculate market shares, the CAP industry's share proves to be microscopic.[15]

As SWBT has pointed out elsewhere in its Reply Comments, it is well known that market shares are economically infirm in determining if there is market power in a market, a point that ALTS even acknowledges on p. 14 of its pleading ("Given that substantial market share is typically considered indicative, though not always dispositive, of market power . . ."). Further, ALTS mixes several markets together, erroneously, to come to its conclusion.[16] The entire compilation of access services is not the relevant market with which to measure competition accurately, so ALTS' analysis is meaningless.[17]

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[14](...continued)
resource advantages, scale economies, established relationships with suppliers, ready access to capital, etc. Such advantages do not, however, mean that these markets are not competitive, nor do they mean that it is appropriate for government regulators to deny the incumbent the efficiencies its size confers in order to make it easier for others to compete. Indeed, the competitive process itself is largely about trying to develop one's own advantages, and all firms need not be equal in all respects for this process to work." Competition in the Interstate Interexchange Marketplace, 6 FCC Rcd 5880 (1991), para. 60 (Long Distance).

[15] ALTS, p. 3. Also, "[T]he most widely-accepted measures of competition, principally market share and growth, demonstrate the LECs do not yet face any level of appreciable competition -- a level far below the degree of competition that would be needed to justify any removal of LEC price caps." ALTS, p. 13.

[16] ALTS, p. 13 ("CAP revenues were only $250 million in 1993, less than one percent of the LECs' total access revenue.").

[17] See also Appendix MKT.

ECONOMIC FRAMEWORK FOR COMPETITIVE MARKET DETERMINATION

Stated simply, competition exists when customers have alternative sources of supply (either actual or potential) at prices they regard as comparable. A market can be considered competitive if the level of competition from firms that produce reasonably close substitutes (or from potential entrants) is sufficient to rule out the exercise of significant market power. In general, the lack or existence of market power is the necessary indicator of whether a service is competitive or not. Thus, the proper framework for competitive market determination is centered around proper identification of the relevant market and an assessment of market power.[1]

1. Market Definition

A market is defined as a geographic area in which a group of products is produced or sold, such that there is strong substitutability in supply and in demand between the products in the group.[2] Thus, defining the relevant market has a product dimension and a geographic dimension.

With regard to the product dimension, the "market" includes all substitutable products and services. Generally, the term "substitutes" in economics describes pairs of goods or services such that an increase in the price of one product or service causes a corresponding increase in the amount of demand for the second comparable product or service, i.e., if the price of one good increases, customers can switch to an alternate product. Services need not be operationally or functionally identical in order to be substitutes for each other, but may involve a trade-off between different dimensions of the products, such as price and level of quality. For example, if consumers have one service available to them, and another service is perceived to be of lower quality or convenience but sells for a commensurably lower price, then the lower quality service can very easily be a substitute for the original service. This is so even if the services are not technically identical, because, in the eyes of customers, the differential in quality is compensated for by the differential in price. Whether a service is technically identical to another service, and vice versa, completely misinterprets the issue of what substitutes are. The real issue is whether customers can substitute one service for another service, or use it as

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[1] For a more complete discussion of the proper economic framework for competitive market determination, see Alexander C. Larson, "An Economic Guide to Competitive Standards in Telecommunications Regulation," 1 CommLaw Conspectus, p. 31 (1993) (Larson, Competitive Standards).

[2] See W. Kip Viscusi, John M. Vernon and Joseph E. Harrington, Jr., Economics of Regulation and Antitrust, pp. 148-49 (1992); U.S. Department of Justice and Federal Trade Commission Horizontal Merger Guidelines § 1.0 (Apr. 2, 1992), reprinted in 4 Trade Reg. Rep., (Merger Guidelines) (CCH) ¶ 13,104.

a replacement, at prices they regard as comparable. If so, then the services are substitutes and part of the same market. With regard to access services, both switched and special access services should be considered part of the market because they are substitutable services.[3]

Several commenters, including Teleport and MFS, contend that the relevant product dimension for assessing the degree of competition should be the "total regulated market currently served by the LECs, which would include access services, local services, intraLATA toll, and associated (tied) services (such as directory assistance, directory publishing)."[4] They claim this is necessary "because the LECs utilize a single, integrated network to provide all of these services."[5] Such a broad market definition has no valid basis and is absolutely useless for any analysis of the market to guide telecommunications public policy. First, there generally is no substitutability between local services and access services. End-users do not consider these services to be substitutes, yet if these services are to be classified as part of the same relevant market, they would have to be substitutes for each other.[6] In fact, the Merger Guidelines, which Teleport has cited heavily, would severely discredit Teleport's proposed definition of the relevant market. Ironically, the way in which the Merger Guidelines prescribe market definition could lead to more accurate analyses of the competitive nature of telecommunications markets. Thus, while Teleport argues for a very broad market definition for purposes of public policy analysis, the Merger Guidelines that Teleport has cited would argue for a far more restrictive market definition.

Second, whether services are provisioned over integrated networks is immaterial to proper market determination because it has no impact on whether customers can substitute one

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[3] Theoretically, intrastate access services should also be included in this market since they are substitute services for interstate switched and special access. In fact, some of today's interstate traffic may well be intrastate, but simply declared interstate by the customer due to tariff arbitrage. The jurisdictional distinction is an artificial regulatory construct that results in artificial separation of what really are the same services. However, since the Commission has no direct jurisdiction over intrastate services, the market in this context should include at least all interstate services.

[4] Teleport, pp. 22-23; MFS, pp. 37-40.

[5] Teleport, p. 23; MFS, pp. 38-39.

[6] Given current jurisdictional and calling scope distinctions customers do not substitute local calls for long distance or access services because the called destinations represent different points on the networks. If customers have access to alternative networks for access services, they may also utilize those networks for local services, or vice versa. Thus, because of the capabilities of telecommunications technologies, competition in access markets facilitates competition in local markets. However, the fact that services are provisioned over the same network does not make the services themselves substitutes.

service for the other. Instead, what appears to be driving these proposals is concern over cost recovery of shared and common costs.[7] An extreme example may serve to illustrate how inappropriate such overly broad market definitions are. Declaring all LEC services as part of one market would be like declaring common household nails and very specialized metal fasteners used only in building space shuttles as part of the same market, merely because they are manufactured in the same physical plant, such that there are some common costs; clearly, the market for common nails is distinct from the market for such specialized fasteners. Cost recovery is a separate issue related to the proper form of regulating the relevant markets, but is unrelated to the proper market definition itself. The Commission should reject out of hand any proposals that would define the product dimension of the relevant market as the total of all LEC services, and instead rely on proper economics to identify those services customers consider to be substitutes. The Commission also must limit its evaluation to those services over which it has jurisdiction.

The definition of a market also has a geographic dimension, a fact acknowledged by several opponents of the LECs.[8] Markets can range from very small, localized areas to the entire nation, or the world. The appropriate geographic size of the market should be defined as that area within which customers have sufficient alternate service choices so that they can substitute for the LEC's service in the event the LEC raises its price. As Schmalensee and Taylor explain: "In effect, the analysis begins with a map of the networks of alternative service providers and interexchange carriers and identifies customers (and their associated volumes of demand) that are sufficiently close (given their size) that an economic alternative to LEC carrier access service exists."[9] Proper identification of the geographic dimension of the market is critical to any evaluation of market power.

Often, "markets" in regulation are arbitrarily defined so that the geographic dimension is jurisdiction (state, interstate), and the product dimension is assumed to be simply the product of interest. This is bound to lead to erroneous conclusions, ones which conclude that there is little or no competition, when in fact, in the relevant market, there is. Overly broad market definitions, as proposed by several commenters, mask information about true market

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[7] MFS, p. 39.

[8] For example, see MFS, p. 44 ("the Commission should examine whether a LEC is subject to competition for all services in a given geographic market"); Teleport, p. 27 ("it is certainly true that the degree of competition varies from place to place"); ICA, p. 11 ("to evaluate the degree of competition relative to the overall size and traffic levels in the particular exchange or market area"); MCI, p. 70 ("the Commission must recognize that the LEC monopolies are geographically based and that a significant degree of competition in one area has no effect whatsoever on the customers' choices in other LEC serving territories").

[9] USTA, Attachment 4, Richard Schmalensee and William Taylor (Schmalensee and Taylor), p. 22.

competition and should be avoided by the Commission. To foster competition, access markets must reflect economic markets so that proper regulation can be applied to markets of different degrees of competition, i.e., streamlined regulation in competitive markets and price cap regulation in economic markets exhibiting little competition as proposed by USTA and the LECs.[10]

2. Market Power

Market power is defined as the ability of a firm (or group of firms) to raise prices above competitive levels for a significant period of time.[11] Stated another way, it is the ability of a firm or group of firms acting jointly to raise prices above the competitive level without losing sales so rapidly that the price increase is unprofitable and must be rescinded. Unless a firm can profitably raise or maintain prices above the opportunity costs of its resources (i.e., the net earnings it could achieve from alternate uses of its resources), it has no power in the marketplace.

If a seller has market power for services that are in the public interest, then regulation may be needed to prevent the exercise of monopoly power by setting price ceilings for these services. On the other hand, a market in which no firm has market power can be considered subject to significant or workable competition and should be made subject to minimal regulatory oversight. Thus, a determination of whether market power is present is necessary to judge whether a market is competitive. Finally, if a multiproduct firm supplying its services via the use of common plant and investment —- as is the case in a network-based industry such

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[10] USTA Reply Comments, Attachment 3, Richard Schmalensee and William Taylor (Schmalensee and Taylor Reply), p. 8, ("If the degree of competition varies from place to place, then surely the appropriate degree of regulation must vary similarly."); and see USTA Reply Comments, Attachment 1, Robert G. Harris (Harris Reply), pp. 5, 24.

[11] The definition of market power used here is that of William Landes and Richard Posner, "Market Power in Antitrust Cases," 94 Harv. L. Rev., 937 (1981). Similarly, the Supreme Court has defined market power (using the terminology "monopoly power") as the power to control prices and to exclude competitors. American Tobacco Co. et al. v. United States, 328 U.S. 781, 809 (1946)(interpreting monopolization power as a power that parties are able, as a group, to exclude actual or potential competition from the field); United States v. E.I. Du Pont de Nemours & Co., 351 U.S. 377, 389 (1956)("[A] party has monopoly power if it has, over 'any part of the trade or commerce among the several States,' a power of controlling prices or unreasonably restricting competition."). On the federal regulatory side of the fence, the Commission defines market power as the power to control price. Policy and Rules Concerning Rates for Competitive Common Carrier Services, 85 F.C.C. 2d 1 (1980) (First Report), para 10. Regarding the related concept of dominant carrier status, the Commission has used the term "dominant carrier" to designate common carriers having market power. Id., para. 56.

as telecommunications—has market power for some subset of its services, it may have no market power in the provision of its other services, meaning that such remaining services require minimal regulation.[12] Therefore, it is important to assess whether market power exists on a market-by-market basis, and not make sweeping inferences about all LEC services based on an assessment of just a subset of markets or services.

Identification of market power is not always easily accomplished. Such determinations have generally been on a case-by-case basis, relying on a number of factors. The most relevant factors in assessing market power are market structural characteristics, such as the existence of other firms selling substitutes, alternate supply capacity, and the lack of entry barriers (i.e., supply elasticity). Demand characteristics of the market are also valuable in assessing market power. For example, a firm's market power is limited if customers consider other services to be good substitutes at comparable prices, if they solicit bids, or if there are a few very large customers such that the firm could lose substantial sales if just one large customer would switch to a competitor. Market share, while frequently discussed, is not a reliable indicator of market power, particularly in markets with high supply and demand elasticities. These factors are discussed in more detail below.

3. Market Structural Characteristics Are the Most Important Factors.

Market structural characteristics are the most relevant factors that should be considered in evaluating market power. These are: (1) the nature and extent of any barriers to market entry and exit, (2) the existence of other firms selling substitutes, and (3) the extent to which those competitors have the facilities to serve LEC customers. High supply elasticities indicate that customers can freely switch between competitors in response to relative price changes. High supply elasticities arise if existing or potential suppliers have or can easily obtain at reasonable cost the capacity necessary to take away enough business from a firm to make monopoly pricing unprofitable.

SWBT recommends that the existence of alternative supply be used as the primary criteria for relaxation of regulation in access markets. Because this criteria focuses on the current presence of firms selling substitutes, any significant examination of entry barriers is moot. Competitive supply will already exist before a determination of lack of market power is needed.

Entry barriers are a necessary condition for the existence of market power because they allow a firm to block or deter other firms from entering the market if prices are raised

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[12] See, e.g., Ronald Braeutigam and John Panzar, "Diversification Incentives Under 'Price-Based' and 'Cost-Based' Regulation," 20 Rand J. Econ., p. 373 (1989); John C. Panzar, "Technological Determinants of Firm and Industry Structure," in 1 Handbook of Industrial Organization, p. 3 (Richard Schmalensee & Robert D. Willig eds., 1989).

above competitive levels. However, as described above, lack of market power can be determined without the specific examination of entry barriers.

LEC competitors and major customers would have the Commission believe that "bottleneck" entry barriers are pervasive and have prevented the development of competition. MFS uses the term "bottleneck" to refer to:

> any means by which a LEC can impede competitors, either as a legal or practical matter, from providing all forms of telecommunications services to all customers (either by excluding them from the market entirely or by placing them at a cost or quality disadvantage in the market.)[13]

In fact, some commenters present long lists of "necessary preconditions" that must be achieved before all entry barriers are removed and competition can develop, including another attempt at achieving complete unbundling of functional network components.[14]

In reviewing these lists, it becomes clear that the IXCs and CAPs would have any LEC advantage declared a barrier to entry. Such claims are unfounded and self-serving. For example, one item on Teleport's list is "LEC volume discounts that penalize customers from utilizing multiple suppliers."[15] Volume discounts are a common pricing practice used pervasively throughout competitive markets, including by IXCs in long distance and by CAPs in access markets. Clearly, no carrier has a unique advantage in offering volume discounts. Using a common example, most grocery stores offer "family packs" of meat and sausages at a lower price per pound than if these items were bought in one pound packages. Any "advantages" realized from such common business practices do not represent "bottlenecks" or entry barriers. In fact, achieving advantages over one's rivals is an integral component of the competitive process and does not, per se, represent barriers to entry. The Commission appropriately recognized this in its Long Distance order, stating:

> An incumbent firm in virtually any market will have certain advantages -- including, perhaps, resource advantages, scale economies, established relationships with suppliers, ready access to capital, etc. Such advantages do not, however, mean that these markets are not competitive, nor do they mean that it is appropriate for government regulators to deny the incumbent the

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[13] MFS, pp. 40-41.

[14] For example, see MFS, pp. 40-44, 46-52; AT&T, pp. 15-18; Teleport, pp. 18-19; ALTS, p. 33; MCI, pp. 72-76.

[15] Teleport, p. 19.

> efficiencies its size confers in order to make it easier for others to compete. Indeed, the competitive process itself is largely about trying to develop one's own advantages, and all firms need not be equal in all respects for this process to work.[16]

Thus, competitors (either incumbents or new entrants) will each have competitive advantages. The proper role of regulation is not to make efficient firms inefficient in the guise of fostering growth of competition. Neither should regulation attempt to remove the advantages that each firm may be able to develop based on its own product development, innovation and effort. Most advantages that a competitor possesses will not be so great as to preclude the effective functioning of a competitive market and therefore do not require any "correction."

The Commission should adhere to these economically sound principles as it reviews the IXCs' and CAPs' claims that entry barriers are "pervasive and multi-faceted," and reject the many claims of "bottleneck" that clearly serve no purpose other than to confer uneconomic advantages to the LECs' competitors.

4. Demand Characteristics Should Also Be Considered.

Demand characteristics of the market are also valuable in assessing market power; this is one of the factors proposed by the Commission. The higher the elasticity of demand that a firm faces, the lower is its ability to raise prices significantly above competitive levels. In general, demand will be elastic if:

- customers consider other services to be good substitutes at a comparable price;
- customers have the incentive and ability to evaluate available options;
- customers are informed purchasers, soliciting bids from alternative suppliers or utilizing telecommunications consultants in choosing services;
- customers increasingly use multiple suppliers;
- there are a few very large customers, or resellers, such that a firm could lose substantial sales if just one large customer would switch to a competitor in response to the firm's price increase;
- firms try to attract customers through enormous advertising campaigns, product differentiation, extensive negotiations in changing/establishing service, etc.

Several of these indicators of elastic demand are present for access services. First, access services are relatively undifferentiated, in part because the technology is available to all providers. Second, the demand side is dominated by only a few very large buyers, each

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[16] Competition in the Interstate Interexchange Marketplace, 6 FCC Rcd 5880 (1991), para. 60 (Long Distance).

knowledgeable and capable of self-provisioning. For these buyers, access services represent an intermediate good that constitutes a large portion of their input costs. Yet, these same buyers compete with each other in the downstream competitive long distance market. To compete effectively in the long distance market, they constantly strive to reduce input costs, i.e., access charges. If the LEC cannot meet requests for access price reductions, these buyers will likely switch to alternate access providers or self-supply. In fact, SWBT's largest access customers have generally indicated that they expect aggressive access rate declines over the next several years, and that they will switch to alternate vendors if SWBT cannot meet their access service price expectations.[17] Clearly, alternatives available to these large customers restrict LEC pricing. Rather than being able to raise access prices, LECs are under constant pressure from the IXCs to lower prices.

There are several additional factors beyond demand and supply characteristics that may be considered in an assessment of market power, including market share and pricing trends. In the NPRM the Commission is asking for comment on the appropriateness of both of these factors as competitive assessment criteria. Neither factor should be used as the primary evidence in assessing the presence of market power, but may be useful as additional support for a conclusion reached in evaluating supply and demand characteristics of a market.

5. Market Shares Are Not A Measure of Market Power.

Several parties rely on market share data as evidence that competition does not exist.[18] These comments and market share data are flawed in several ways. First, as discussed more fully below, market share is not a reliable indicator of competition or market power and should not be used as a proxy for market power.[19]

Second, these market shares are inappropriately based on current sales or volume data, and not on relative shares of capacity as they properly should be. Market share for a

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[17] Price reductions can be achieved through restructuring rates. One of the ways to decrease access prices is for the Commission to remove some of the subsidies embedded in switched access rates by adopting a cost causative method for non-traffic sensitive cost recovery, an approach supported by the LECs and AT&T alike. AT&T, p. 27, note 34.

[18] Teleport, p. i; AT&T, pp. i, 9.

[19] The court in Ball Memorial recognized this: "Market share reflects current sales, but today's sales do not always indicate power over sales and price tomorrow (citations omitted)." Ball Memorial Hosp., Inc. v. Mutual Hosp. Ins. Inc., 784 F.2d 1325, 1336 (7th Cir. 1986). Also see William Landes and Richard Posner, Market Power in Antitrust Cases, 94 Harv. L. Rev. p. 937 (1981) (Landes and Posner); Larson, Competitive Standards, pp. 42-43; and E. Thomas Sullivan and Jeffrey L. Harrison, Understanding Antitrust and Its Economic Implications, pp. 220-222 (1988) (Sullivan and Harrison).

single firm is ideally defined as the firm's sales divided by the productive capacity of all the firms producing the same items that consumers regard as reasonable substitutes.[20] The relevant measure is available capacity, not firm outputs. This point was clearly made by AT&T in another proceeding where AT&T states:

> where there is a large disparity between [market] shares based on capacity and those based on output, as is the case in the interexchange market, it is especially important to take excess capacity into account in assessing market concentration and, in turn, market power.[21]

This statement applies equally to the exchange access market. As Schmalensee and Taylor explain, use of current revenue or usage volumes, as proposed by the LECs' competitors, falls into the:

> logical fallacy of using measures of the past success of competitors in multiple markets as a test for the presence of constraints on LEC pricing in specific markets. Use of such measures prejudges the outcome of the competitive process by permitting the regulated firm to respond to competitive entry only after competitors have achieved some measure of success.[22]

Third, in citing CAP market shares of less than one percent, AT&T and the CAPs also fail to properly identify the market. Instead of properly assessing market shares only for geographic areas where competitors are present, they calculate CAP shares as a percent of total nationwide LEC access revenues. This would be like comparing the sales of a very popular but local fast food chain to the total domestic sales of McDonald's in evaluating if competition exists for fast foods in that local area. Clearly, these are not relevant comparisons.

Fourth, in focusing on CAP shares of the market, these estimates do not include the impact of other firms already competing with the LECs through their private facilities or through self-supply. For example, when the IXCs locate their facilities and points-of-presence closer to the LEC's serving wire centers, they no longer use LEC facilities for that portion of the transmission they now provide themselves. This means that alternate supply capacity is used which is not reflected in the market shares put forth by LEC competitors. While capacity

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[20] Sullivan and Harrison, p. 222.

[21] Statement of Stanley M. Besen, CC Docket 90-132, AT&T Reply Comments, Appendix B, September 18, 1990, pp. 3-4.

[22] Schmalensee and Taylor Reply, p. 11.

estimates of private networks and self-supply are not readily available, they are an important factor in assessing market power and cannot simply be ignored.

Even if market share calculations were based on relevant and comparable data, care must be exercised in evaluating the resulting market shares, and they should not be relied on as an indicator of market power. As regulatory and antitrust economists would be quick to point out, it is well known that market share information cannot be used as an indicator of competition or market power.[23] Market share as an indicator of market power is problematic because it provides a myopic view of the entire market, particularly in regulated industries undergoing a transition to competition. During such a transition, a "high" market share may mean nothing in terms of market power, since it may be but an artifact of the past, devoid of information concerning a regulated firm's actual ability to control current prices. This latter point has been made in the courts.[24]

In fact, the following three general propositions can be stated about market power and its relation to other industry structural considerations, including market share:

1. Market power varies directly with market share.
2. Market power varies inversely with the elasticity of demand.
3. Market power varies inversely with supply elasticity.[25]

Because of the effects of market supply elasticity and the price elasticity of demand, both of which are inversely related to market power, a "low" market share is indicative of a lack of market power, but a "high" market share does not necessarily indicate that market power exists, since high market shares can coexist with high price elasticities and supply elasticities, both of which serve to dampen market power. Thus, while low market shares can

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[23] William Landes and Richard Posner, "Market Power in Antitrust Cases", 94 Harv. L. Rev., p. 937 (1981) (Landes and Posner); Larson, Competitive Standards, pp. 42-43; and Sullivan and Harrison, pp. 220-222.

[24] Metro Mobile CTS, Inc. v. New Vector Communications, Inc., 892 F.2d 62, 63 (9th Cir. 1989) ("Reliance on statistical market share in cases involving regulated industries is at best a tricky enterprise and is downright folly where, as here, the predominant market share is the result of regulation. In such cases, the court should focus directly on the regulated firm's ability to control prices or exclude competition.").

[25] These are discussed in Landes and Posner, pp. 944-52, and in Sullivan and Harrison, pp. 220-22. A good general discussion within a case study may be found in Albert L. Danielsen and David R. Kamerschen, "A Methodological Study of Market Power and Market Shares in Intrastate Inter-LATA Telecommunications," in Telecommunications in the Post-Divestiture Era, pp. 135, 147-49 (Albert L. Danielsen and David R. Kamerschen eds., 1986).

be dispositive of a finding of no market power, high market shares alone do not allow a regulatory agency to make any reliable inferences.

6. The Merger Guidelines Are Inappropriate for Measuring Competition in Telecommunications.

Teleport has recommended that, once a LEC has demonstrated that Teleport's three recommended prerequisites for local exchange competition are in place, the Commission should then look to the Department of Justice/Federal Trade Commission (DOJ/FTC) Merger Guidelines.[26] Specifically, Teleport recommends that the Merger Guidelines be used to determine if a group of LEC-provided interstate services qualify for reduced or streamlined regulation. Such a recommendation is a simplistic, erroneous, and myopic approach to telecommunications public policy. It appears that Teleport wishes the Commission to rely on a standard that does not apply, and that no firm in transition to a competitive market could pass, even if it does not possess market power.

While current economic approaches to antitrust and competition analysis are useful for the purposes for which they have been designed (i.e., analysis of proposed mergers, antitrust court proceedings), they are of limited or no use in direct application to the examination of competition in telecommunications markets. The guidelines the Commission should adopt, the Merger Guidelines, and orthodox antitrust analysis should be based on the same set of economic principles. These principles, however, need not be applied in the same manner for measuring telecommunications competition in interstate access markets, for merger analysis, and for antitrust court proceedings.

The Merger Guidelines are of limited usefulness in developing rules for use in interstate access markets. These guidelines were designed to measure whether a merger of two firms, each of which lacks market power, will result in a single firm that does possess market power. This is very different from measuring whether competition already exists and regulation should be relaxed.

If one is measuring the current state of competition in a telecommunications market, the magnum of proof should be less onerous. One objective of the Commission is to ascertain when regulation should be applied, with a potential for reduced regulatory oversight. The penalty of arriving at an erroneous conclusion in this endeavor is far less than in merger analysis or antitrust court. If a regulated firm is granted reduced regulatory oversight via changes to price caps, then it most likely will seek to lower its prices if the market is competitive. This, of course, benefits the public. If, on the other hand, a regulated firm is granted reduced regulatory oversight, and the market is not truly competitive, the only way it

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[26] Teleport, pp. iii, 17-18.

can better its position is to raise prices of services for which it has market power. This would not be permitted under modifications to price caps, and would not go undetected even if it were.

7. Conclusion

The factors outlined above represent the proper economic framework that should guide the Commission in its assessment of interstate access services competition. Even some of the LECs' major opponents in this proceeding agree with significant aspects of this framework.[27] However, they would have the Commission take on a very one-sided view in evaluating these factors. The Commission should resist these efforts. Instead, the Commission should rely on its proposed framework and sound economic principles that will foster effective competition and not merely the interests of individual competitors.

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[27] Teleport, p. 20 ("In analyzing the local exchange market, the Commission should look to its experience with the IXC industry, in which rational current market indicators were used to determine the level of competitiveness"); MCI, pp. 68-71 (listing these factors: barriers to entry and exit; the existence of potential and actual competitors; the extent to which competitors have facilities to serve; customer willingness to use competitors' service; market share; pricing trends; effect of expanded interconnection).

CERTIFICATE OF SERVICE

I, Liz Jensen, hereby certify that the foregoing Reply Comments of Southwestern Bell Telephone Company in Docket 94-1, have been served this 29th day of June, 1994 to the Parties of Record.

Liz Jensen

Liz Jensen

June 29, 1994